



1/3 Rec'd PCT/PAC 17 JAN 2006

per #4  
\$

PATENT APPLICATION  
Our Docket No. 20050701.ORI

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re App : John David Jenkinson et al : January 12, 2006  
S.N. : 10/536,664 : Art Unit unknown  
Filed : May 27, 2005  
For : CONTROL OF APOPTOSIS  
-----

LETTER

Mail Stop Missing Parts  
Commissioner For Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In response to the Notification of Missing Requirements Under 35 U.S.C. 371 in the United States Designated/Elected Office (DO/EO/US) bearing a date mailed of November 21, 2005, submitted herewith please find a Response, an executed Supplemental Declaration, Power of Attorney and Petition form, as well as a check in the amount of \$130.00 to cover the surcharge for the late filing of the Declaration. A substitute copy of the "Sequence Listing" in computer readable form, together with a printout of the computer readable "Sequence Listing" and Verification Summary Sheet are also submitted with this letter, as is a copy of the Notification including the marked-up "Raw Sequence Listing" previously submitted.

The Commissioner is authorized to charge any additional fees or refund any overpayment under 37 CFR 1.16 and 1.17 which may be required by this paper to Deposit Account No. 08-1265.

Respectfully submitted,  
NIKOLAI & MERSEREAU, P.A.

*C. G. Mersereau*

C. G. Mersereau  
Registration No. 26205  
Attorneys for Applicant(s)  
820 International Centre  
900 Second Avenue South  
Minneapolis, MN 55402  
(612) 339-7461

substitute computer readable form does comply with the requirements of 37 CFR 1.822 and/or 1.823, as all indicated corrections have been made. A copy of the marked-up "Raw Sequence Listing" previously submitted is also attached, together with a printout of the computer readable "Sequence Listing".

The undersigned attorney hereby states that to the best of his present knowledge and belief, the information recorded in computer readable form is identical to that of the written sequence listing and includes no new matter.

The Commissioner is authorized to charge any additional fees or refund any overpayment under 37 CFR 1.16 and 1.17 which may be required by this paper to Deposit Account No. 08-1265.

Respectfully submitted,

NIKOLAI & MERSEREAU, P.A.



C. G. Mersereau  
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820 International Centre  
900 Second Avenue So.  
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Rec'd PCT/PTO 17 JAN 2006 #4

PATENT APPLICATION

Our Docket No. 20050701.ORI

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re App : John David Jenkinson et al : January 12, 2006  
S.N. : 10/536,664 : Art Unit unknown  
Filed : May 27, 2005  
For : CONTROL OF APOPTOSIS

-----  
**RESPONSE**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir or Madam:

This paper is submitted in response to a Notification of Missing Requirements dated November 21, 2005 which carried a shortened-statutory period for response of two months so that a reply is due by January 21, 2006.

Accordingly, applicants submit herewith a copy of that Notice, together with attachments, with this response.

An executed Supplemental Declaration, Power of Attorney and Petition form, as well as a check in the amount of \$130.00 to cover the surcharge for the late filing fee, is enclosed.

A substitute copy of the "Sequence Listing" in computer readable form with Verification Summary Sheet is also submitted with this letter. It is believed that the content of the

# **CERTIFICATE OF MAILING**

I hereby certify that the foregoing Response, a copy of the Notification of Missing Requirements Under 35 U.S.C. 371 in the United States Designated/Elected Office (DO/EO/US), a copy of the "Sequence Listing" in computer readable form (CRF), a copy of the marked-up "Raw Sequence Listing" previously submitted, together with a printout of the computer readable "Sequence Listing", a Verification Summary Sheet, a Transmittal Letter, an executed Supplemental Declaration and a check in the amount of \$130.00 in application Serial No. 10/536,664, filed May 27, 2005, of John David Jenkinson et al, entitled "CONTROL OF APOPTOSIS", are being deposited with the U.S. Postal Service as First Class mail in an envelope addressed to Mail Stop Missing Parts, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, postage prepaid, on January 12, 2006.



Barbara L. Davis  
on behalf of C. G. Mersereau  
Attorney for Applicant

Date of Signature: January 12, 2006

10/536664  
PCT/PTO 17 JAN 2006

PAGE: 1  
01/11/2006

VERIFICATION SUMMARY REPORT

DATE:

PATENT APPLICATION

TIME:

06:57:14

INPUT SEQ: C:\Documents and Settings\barbara  
\Desktop\20050701-Seq.List..txt

#### GENERAL INFORMATION SECTION

3,<110> Imperial College Innovations  
5,<120> Control of Apoptosis  
7,<130> 20050701.ORI  
9,<140> US/10/536,664  
10,<141> 2005-05-27  
12,<160> 19  
14,<170> Patent In version 3.1

#### ERRORED LINES SECTION

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Lys  
W--> 59 Xaa Xaa Xaa Met Asn Ile Gln Met Leu Leu Glu Ala Ala Asp Tyr  
Leu  
W--> 112 Xaa Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Cys

#### STATISTICS SUMMARY

Application Serial Number: US/10/536,664  
Alpha or Numeric or Xml: Numeric  
Application Class:  
Application File Date: 2005-05-27  
Art Unit:  
Software Application: OTHER  
Total Number of Sequences: 19  
Total Nucleotides: 12263  
Total Amino Acids: 200  
Number of Errors: 0  
Number of Warnings: 3  
Number of Corrections: 0



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

U.S. APPLICATION NUMBER NO. 10/536,664	FIRST NAMED APPLICANT John David Jenkinson	ATTY. DOCKET NO. 20050701.ORI
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INTERNATIONAL APPLICATION NO. PCT/GB03/05321
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I.A. FILING DATE 12/05/2003	PRIORITY DATE 12/05/2002
--------------------------------	-----------------------------

23595  
NIKOLAI & MERSEREAU, P.A.  
900 SECOND AVENUE SOUTH  
SUITE 820  
MINNEAPOLIS, MN 55402

LOU NOV 28 2005



CONFIRMATION NO. 3962  
371 FORMALITIES LETTER



\*OC000000017499501\*

Date Mailed: 11/21/2005

### NOTIFICATION OF MISSING REQUIREMENTS UNDER 35 U.S.C. 371 IN THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US)

The following items have been submitted by the applicant or the IB to the United States Patent and Trademark Office as a Designated / Elected Office (37 CFR 1.495).

- Copy of the International Application filed on 05/27/2005
- Copy of the International Search Report filed on 05/27/2005
- Preliminary Amendments filed on 05/27/2005
- Biochemical Sequence Diskette filed on 05/27/2005
- Oath or Declaration filed on 05/27/2005
- Biochemical Sequence Listing filed on 05/27/2005
- Request for Immediate Examination filed on 05/27/2005
- U.S. Basic National Fees filed on 05/27/2005
- Priority Documents filed on 05/27/2005

*Supplemental Decl.  
JAN. 21, 2006  
BSD 12/21/05*

The applicant needs to satisfy supplemental fees problems indicated below.

The following items **MUST** be furnished within the period set forth below in order to complete the requirements for acceptance under 35 U.S.C. 371:

- • Oath or declaration of the inventors, in compliance with 37 CFR 1.497(a) and (b), identifying the application by the International application number and international filing date. The current oath or declaration does not comply with 37 CFR 1.497(a) and (b) in that it:
  - is not executed in accordance with either 37 CFR 1.66 or 37 CFR 1.68.
- To avoid abandonment, a surcharge (for late submission of filing fee, search fee, examination fee or oath or declaration) as set forth in 37 CFR 1.492(h) of \$130 for a non-small entity, must be submitted with the missing items identified in this letter.

SUMMARY OF FEES DUE:

Total additional fees required for this application is \$130 for a Large Entity:

- **\$130 Surcharge.**
- The paper or compact disc copy of the "Sequence Listing" is not the same as the computer readable form of the "Sequence Listing" as required by 37 CFR 1.821(e). Applicant must provide a substitute paper or compact disc copy of the "Sequence Listing", **as well as an amendment specifically directing its entry into the application** OR a substitute computer readable form (CRF) copy of the "Sequence Listing". These two items must be the same. Applicant must also provide a statement that the content of the sequence listing information recorded in computer readable form is identical to the written (on paper or compact disc) sequence listing and, where applicable, includes no new matter, as required by 37 CFR 1.821(e), 1.821(f), 1.821(g), 1.825(b), or 1.825(d). If the effective filing date is on or after September 8, 2000, see the final rulemaking notice published in the Federal Register at 65 FR 54604 (September 8, 2000) and 1238 OG 145 (September 19, 2000).

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

For questions regarding compliance to 37 CFR 1.821-1.825 requirements, please contact:

- For Rules Interpretation, call (571) 272-0951
- For Patent Software Program Help, call Patent EBC at 1-866-217-9197 or directly at 703-305-3028 / 703-308-6845 between the hours of 6 a.m. and 12 midnight, Monday through Friday, EST.
- Send e-mail correspondence for Patent Software Program Help @ [ebc@uspto.gov](mailto:ebc@uspto.gov)

**ALL OF THE ITEMS SET FORTH ABOVE MUST BE SUBMITTED WITHIN TWO (2) MONTHS FROM THE DATE OF THIS NOTICE OR BY 32 MONTHS FROM THE PRIORITY DATE FOR THE APPLICATION, WHICHEVER IS LATER. FAILURE TO PROPERLY RESPOND WILL RESULT IN ABANDONMENT.**

The time period set above may be extended by filing a petition and fee for extension of time under the provisions of 37 CFR 1.136(a).

Applicant is reminded that any communications to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5)

*A copy of this notice **MUST** be returned with the response.*

CHARITTA A BURT

Telephone: (703) 308-9140 EXT 207

**PART 1 - ATTORNEY/APPLICANT COPY**

U.S. APPLICATION NUMBER NO.	INTERNATIONAL APPLICATION NO.	ATTY. DOCKET NO.
10/536,664	PCT/GB03/05321	20050701.ORI

**STIC Biotechnology Systems Branch**

**RAW SEQUENCE LISTING**  
**ERROR REPORT**

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number:

10/536,664

Source:

PCT

Date Processed by STIC:

6/7/05

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.

PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:

- 1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,
- 2) TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY

FOR CRF SUBMISSION AND PATENTIN SOFTWARE QUESTIONS, PLEASE CONTACT MARK SPENCER, TELEPHONE: 571-272-2510; FAX: 571-273-0221

TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE **CHECKER VERSION 4.2.2 PROGRAM**, ACCESSIBLE THROUGH THE U.S. PATENT AND TRADEMARK OFFICE WEBSITE. SEE BELOW FOR ADDRESS:

<http://www.uspto.gov/web/offices/pac/checker/chkrnote.htm>

Applicants submitting genetic sequence information electronically on diskette or CD-Rom should be aware that there is a possibility that the disk/CD-Rom may have been affected by treatment given to all incoming mail.

Please consider using alternate methods of submission for the disk/CD-Rom or replacement disk/CD-Rom.

Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

1. EFS-Bio (<<http://www.uspto.gov/ebc/efs/downloads/documents.htm>> , EFS Submission User Manual - ePAVE)
2. U.S. Postal Service: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450
3. Hand Carry, Federal Express, United Parcel Service, or other delivery service (EFFECTIVE 01/14/05):  
U.S. Patent and Trademark Office, Mail Stop Sequence, Customer Window, Randolph Building, 401 Dulany Street, Alexandria, VA 22314

Revised 01/24/05



# Raw Sequence Listing Error Summary

## ERROR DETECTED

## SUGGESTED CORRECTION

SERIAL NUMBER

10/5361664

ATTN: NEW RULES CASES: PLEASE DISREGARD ENGLISH "ALPHA" HEADERS, WHICH WERE INSERTED BY PTO SOFTWARE

- 1      Wrapped Nucleics  
    Wrapped Aminos    The number/text at the end of each line "wrapped" down to the next line. This may occur if your file was retrieved in a word processor after creating it. Please adjust your right margin to .3; this will prevent "wrapping."
- 2      Invalid Line Length    The rules require that a line not exceed 72 characters in length. This includes white spaces.
- 3      Misaligned Amino  
    Numbering    The numbering under each 5<sup>th</sup> amino acid is misaligned. Do not use tab codes between numbers; use space characters, instead.
- 4      Non-ASCII    The submitted file was not saved in ASCII(DOS) text, as required by the Sequence Rules. Please ensure your subsequent submission is saved in ASCII text.
- 5      Variable Length    Sequence(s)      contain n's or Xaa's representing more than one residue. Per Sequence Rules, each n or Xaa can only represent a single residue. Please present the maximum number of each residue having variable length and indicate in the <220>-<223> section that some may be missing.
- 6      PatentIn 2.0  
    "bug"    A "bug" in PatentIn version 2.0 has caused the <220>-<223> section to be missing from amino acid sequences(s)     . Normally, PatentIn would automatically generate this section from the previously coded nucleic acid sequence. Please manually copy the relevant <220>-<223> section to the subsequent amino acid sequence. This applies to the mandatory <220>-<223> sections for Artificial or Unknown sequences.
- 7      Skipped Sequences  
    (OLD RULES)    Sequence(s)      missing. If intentional, please insert the following lines for each skipped sequence:  
                    (2) INFORMATION FOR SEQ ID NO:X: (insert SEQ ID NO where "X" is shown)  
                    (i) SEQUENCE CHARACTERISTICS: (Do not insert any subheadings under this heading)  
                    (xi) SEQUENCE DESCRIPTION:SEQ ID NO:X: (insert SEQ ID NO where "X" is shown)  
                    This sequence is intentionally skipped  
  
                    Please also adjust the "(ii) NUMBER OF SEQUENCES:" response to include the skipped sequences.
- 8      Skipped Sequences  
    (NEW RULES)    Sequence(s)      missing. If intentional, please insert the following lines for each skipped sequence.  
                    <210> sequence id number  
                    <400> sequence id number  
                    000
- 9      Use of n's or Xaa's  
    (NEW RULES)    Use of n's and/or Xaa's have been detected in the Sequence Listing.  
                    Per 1.823 of Sequence Rules, use of <220>-<223> is MANDATORY if n's or Xaa's are present.  
                    In <220> to <223> section, please explain location of n or Xaa, and which residue n or Xaa represents.
- 10      Invalid <213>  
    Response    Per 1.823 of Sequence Rules, the only valid <213> responses are: Unknown, Artificial Sequence, or scientific name (Genus/species). <220>-<223> section is required when <213> response is Unknown or is Artificial Sequence-
- 11      Use of <220>    Sequence(s)      missing the <220> "Feature" and associated numeric identifiers and responses. Use of <220> to <223> is MANDATORY if <213> "Organism" response is "Artificial Sequence" or "Unknown." Please explain source of genetic material in <220> to <223> section.  
                    (See "Federal Register," 06/01/1998, Vol. 63, No. 104, pp. 29631-32) (Sec. 1.823 of Sequence Rules)
- 12      PatentIn 2.0  
    "bug"    Please do not use "Copy to Disk" function of PatentIn version 2.0. This causes a corrupted file, resulting in missing mandatory numeric identifiers and responses (as indicated on raw sequence listing). Instead, please use "File Manager" or any other manual means to copy file to floppy disk.
- 13      Misuse of n/Xaa    "n" can only represent a single nucleotide; "Xaa" can only represent a single amino acid



PCT

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/536,664

DATE: 06/07/2005

TIME: 11:14:24

Input Set : D:\20050701-SEQ.txt

Output Set: N:\CRF4\06072005\J536664.raw

3 <110> APPLICANT: Imperial College Innovations  
 5 <120> TITLE OF INVENTION: Control of Apoptosis  
 7 <130> FILE REFERENCE: ICOY/P29703PC  
 C--> 9 <140> CURRENT APPLICATION NUMBER: US/10/536,664  
 C--> 9 <141> CURRENT FILING DATE: 2005-05-27  
 9 <160> NUMBER OF SEQ ID NOS: 19  
 11 <170> SOFTWARE: PatentIn version 3.1  
 13 <210> SEQ ID NO: 1  
 14 <211> LENGTH: 36  
 15 <212> TYPE: PRT  
 16 <213> ORGANISM: Artificial  
 18 <220> FEATURE:  
 19 <223> OTHER INFORMATION: Derivative of SAP18  
 21 <220> FEATURE:  
 22 <221> NAME/KEY: MISC\_FEATURE  
 23 <222> LOCATION: (1)..(3)  
 24 <223> OTHER INFORMATION: A linker amino acid sequence  
 27 <400> SEQUENCE: 1  
 W--> 28 Xaa Xaa Xaa Met Ala Val Glu Ser Arg Val Thr Gln Glu Glu Ile Lys  
 30 1 5 10 15  
 33 Lys Glu Pro Glu Lys Pro Ile Asp Arg Glu Lys Thr Cys Pro Leu Leu  
 34 20 25 30  
 37 Leu Arg Val Phe  
 38 35  
 41 <210> SEQ ID NO: 2  
 42 <211> LENGTH: 32  
 43 <212> TYPE: PRT  
 44 <213> ORGANISM: Artificial  
 46 <220> FEATURE:  
 47 <223> OTHER INFORMATION: Derivative of MAD1  
 49 <220> FEATURE:  
 50 <221> NAME/KEY: MISC\_FEATURE  
 51 <222> LOCATION: (1)..(3)  
 52 <223> OTHER INFORMATION: A linker amino acid sequence  
 55 <400> SEQUENCE: 2  
 W--> 56 Xaa Xaa Xaa Met Asn Ile Gln Met Leu Leu Glu Ala Ala Asp Tyr Leu  
 58 1 5 10 15  
 61 Glu Arg Arg Glu Arg Glu Ala Glu His Gly Tyr Ala Ser Met Leu Pro  
 62 20 25 30  
 65 <210> SEQ ID NO: 3  
 66 <211> LENGTH: 10  
 67 <212> TYPE: PRT  
 68 <213> ORGANISM: Artificial

Invalid response

pls explain "Xaa" locations.

Does Not Comply  
Corrected Diskette Needed  
(pg.1-2)

Pls see item #13 on error summary sheet.

Invalid response

pls explain "Xaa" locations.

Ex I: "Xaa" can only represent a single amino acid.

6/7/05

10/536,664

Page 2

<210> 10

<211> 22

<212> DNA

<213> Artificial

<220>

<223> BclP TFO

<400> 10

gggtgtgggg tutgtgtgtg gt

PLS EXPLAIN source

OF  
genetic  
material.

What is this?

22

↑ See item # 11 on error  
summary sheet.

↑  
The type of errors shown exist throughout  
the Sequence Listing. Please check subsequent  
sequences for similar errors.

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/536,664

DATE: 06/07/2005

TIME: 11:14:24

Input Set : D:\20050701-SEQ.txt

Output Set: N:\CRF4\06072005\J536664.raw

70 &lt;220&gt; FEATURE:

71 &lt;223&gt; OTHER INFORMATION: NLS peptide sequence

73 &lt;400&gt; SEQUENCE: 3

75 Asp Asp Asp Pro Lys Lys Lys Arg Lys Val

76 1 5 10

79 &lt;210&gt; SEQ ID NO: 4

80 &lt;211&gt; LENGTH: 16

81 &lt;212&gt; TYPE: PRT

82 &lt;213&gt; ORGANISM: Artificial

84 &lt;220&gt; FEATURE:

85 &lt;223&gt; OTHER INFORMATION: Antennapedia homeodomain based penetratins

87 &lt;400&gt; SEQUENCE: 4

89 Arg Gln Ile Lys Ile Trp Phe Gln Asn Arg Arg Met Lys Trp Lys Lys

90 1 5 10 15

93 &lt;210&gt; SEQ ID NO: 5

94 &lt;211&gt; LENGTH: 15

95 &lt;212&gt; TYPE: PRT

96 &lt;213&gt; ORGANISM: Artificial

98 &lt;220&gt; FEATURE:

99 &lt;223&gt; OTHER INFORMATION: TAT penetratin

101 &lt;220&gt; FEATURE:

102 &lt;221&gt; NAME/KEY: MISC\_FEATURE

103 &lt;222&gt; LOCATION: (1)..(1)

104 &lt;223&gt; OTHER INFORMATION: Cys-acetamidomethyl

107 &lt;400&gt; SEQUENCE: 5

W--&gt; 109 Xaa Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg Pro Pro Gln Cys

110 1 5 10 15

113 &lt;210&gt; SEQ ID NO: 6

114 &lt;211&gt; LENGTH: 911

115 &lt;212&gt; TYPE: DNA

116 &lt;213&gt; ORGANISM: Homo sapiens

118 &lt;400&gt; SEQUENCE: 6

119 tgattgaaga caccctctcg tccaagaatg caaagcacat ccaataaaat agctggatta 60

121 taactcctct tctttctctg ggggcccgtg ggtgggagct ggggcgagag gtgccgttg 120

123 ccccggttgc ttttctctg ggaaggatgg cgcacgctgg gagaacggg tacgacaacc 180

125 gggagatagt gatgaagtac atccattata agctgtcgca gaggggctac gagtgggatg 240

127 cgggagatgt gggcgccgcg ccccgggggg ccgccccgc accgggcatc ttctcctccc 300

129 agcccgggca cacgccccat ccagccgcat ccgcgaccc ggtcgccagg acctcgccgc 360

131 tgcagacccc ggctgcccc ggcgccgccc cggggcctgc gctcagcccc gtgccacctg 420

133 tgggtccacct ggccctccgc caagccggcg acgacttctc ccgcccgtac cgcggcgact 480

135 tcgcccagat gtccagccag ctgcacctga cgcccttcac cgcgcgggga cgctttgcca 540

137 cgggtggtgga ggagctcttc agggacgggg tgaactgggg gaggattgtg gccttctttg 600

139 agttcggttg ggtcatgtgt gtggagagcg tcaaccggga gatgtcgccc ctggtggaca 660

141 acatcgccct gtggatgact gagtacctga accggcacct gcacacctgg atccaggata 720

143 acggaggctg ggtaggtgca tctggtgatg tgagtctggg ctgaggccac aggtccgaga 780

145 tcggggggtg gagtgcgggt gggctcctgg gcaatgggag gctgtggagc cggcgaaata 840

147 aatcagagt tgttgcttcc cggcgtgtcc ctacctctc ctctggacaa agcgttcact 900

149 cccaacctga c 911

152 &lt;210&gt; SEQ ID NO: 7

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/536,664

DATE: 06/07/2005

TIME: 11:14:24

Input Set : D:\20050701-SEQ.txt

Output Set: N:\CRF4\06072005\J536664.raw

153 &lt;211&gt; LENGTH: 6030

154 &lt;212&gt; TYPE: DNA

155 &lt;213&gt; ORGANISM: Homo sapiens

157 &lt;400&gt; SEQUENCE: 7

```
158 gttggccccc gttacttttc ctctgggaaa tatggcgcac gctgggagaa caggggtacga      60
160 taaccgggag atagtgatga agtacatcca ttataagctg tcgcagaggg gctacgagtg      120
162 ggatgcggga gatgtgggcg ccgcgcccc ccggggccgcc ccgcgcggcg gcatcttctc      180
164 ctgcagccc gggcacacgc cccatacagc cgcaccccg gacccggtcg ccaggacctc      240
166 gccgctgcag accccggctg ccccgggcgc cgcgcgggg cctgcgctca gcccggtgcc      300
168 acctgtggtc cacctgacct tccgccaggc cggcgacgac ttctcccgcc gctaccgcgg      360
170 cgacttcgcc gagatgtcca ggcagctgca cctgacgccc ttcaccgcgc ggggacgctt      420
172 tgccacggtg gtggaggagc tcttcaggga cggggtgaac tgggggagga ttgtggcctt      480
174 ctttgagttc ggtggggtca tgtgtgtgga gagcgtcaac cgggagatgt cggccctggt      540
176 ggacaacatc gccctgtgga tgactgagta cctgaaccgg cacctgcaca cctggatcca      600
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180 tgattttctc tggctgtctc tgaagactct gctcagtttg gccctggtgg gagcttgcac      720
182 caccctgggt gcctatctgg gccacaagt aagtcaacat gcctgcccc aacaaatatg      780
184 caaaagggtc actaaagcag tagaataat atgcattgtc agtgatgttc catgaaacaa      840
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190 aagggaataa tcattttatt tttacattat taagaaaaaa agattttatt atttaagaca     1020
192 gtcccatcaa aactcctgtc tttggaaatc cgaccactaa ttgccaagca ccgcttcgtg     1080
194 tggctccacc tggatgttct gtgcctgtaa acatagattc gctttccatg ttgttgcccg     1140
196 gatcaccatc tgaagagcag acggatgga aaaggacctg atcattgggg aagctggctt     1200
198 tctggctgct ggaggctggg gagaagggtg tcattcactt gcatttcttt gccctggggg     1260
200 ctgtgatatt aacagaggga gggttcctgt ggggggaagt ccattgcctcc ctggcctgaa     1320
202 gaagagactc tttgcatatg actcacatga tgcatacctg gtgggaggaa aagagttggg     1380
204 aacttcagat ggacctagta cccactgaga tttccacgcc gaaggacagc gatgggaaaa     1440
206 atgcccttaa atcataggaa agtatttttt taagctacca attgtgccga gaaaagcatt     1500
208 ttagcaattt atacaatatc atccagtacc ttaagccctg attgtgtata ttcatatatt     1560
210 ttggatacgc acccccacac tcccataact ggctctgtct gagtaagaaa cagaatcctc     1620
212 tggaaacttga ggaagtgaac atttcgggtga ctccgcacac aggaaggcta gagttaccca     1680
214 gagcatcagg ccgccacaag tgccctgctt taggagaccg aagtcgcgag aacctgcctg     1740
216 tgtcccagct tggaggcctg gtccctggaac tgagccgggg ccctcactgg cctcctccag     1800
218 ggatgatcaa cagggcagtg tggctctcga atgtctggaa gctgatggag ctccagaattc     1860
220 cactgtcaag aaagagcagt agagggtgt ggctgggctt gtcaccctgg ggccctccag     1920
222 gtaggcccgt tttcacgtgg agcatgggag ccacgacctt tcttaagaca tgtatcactg     1980
224 tagagggaag gaacagaggc cctgggcccc tctatcaga aggacatggt gaaggctggg     2040
226 aacgtgagga gaggcaatgg ccacggccca ttttggtgt agcacatggc acgttggctg     2100
228 tgtggccttg gccacactgt gagtttaaa caaggcttta aatgactttg gagagggtca     2160
230 caaatcctaa aagaagcatt gaagtgaggt gtcatggatt aattgacccc tgtctatgga     2220
232 attacatgta aaacattatc ttgtcactgt agtttggttt tatttgaaaa cctgacaaaa     2280
234 aaaaagttcc aggtgtggaa tatgggggtt atctgtacac cctggggcat taaaaaaaaa     2340
236 atcaatggtg gggaaactata aagaagtaac aaaagaagt acatcttcag caaataaaact     2400
238 aggaaatttt tttttcttcc agtttagaat cagccttgaa acattgatgg aataactctg     2460
240 tggcattatt gcattatata ccatttatct gtattaaact tggaaatgtac tctgttcaat     2520
242 gtttaatgct gtggttgata tttcgaaagc tgctttaaaa aaatacatgc atctcagcgt     2580
244 ttttttgttt ttaattgtat ttagttatgg cctatacact atttgtagc aaaggtgatc     2640
246 gttttctgtt tgagattttt atctcttgat tcttcaaaag cattctgaga aggtgagata     2700
```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/536,664

DATE: 06/07/2005

TIME: 11:14:24

Input Set : D:\20050701-SEQ.txt

Output Set: N:\CRF4\06072005\J536664.raw

248	agccctgagt	ctcagctacc	taagaaaaac	ctggatgtca	ctggccactg	aggagctttg	2760
250	tttcaaccaa	gtcatgtgca	tttccacgtc	aacagaattg	tttattgtga	cagttatatac	2820
252	tgttgtccct	ttgacctgtg	ttcttgaagg	tttctctgtc	cctgggcaat	tccgcattta	2880
254	attcatggta	ttcaggatta	catgcatgtt	tggttaaacc	catgagattc	attcagttaa	2940
256	aaatccagat	ggcaaatgac	cagcagattc	aaatctatgg	tggtttgacc	tttagagagt	3000
258	tgctttacgt	ggcctgtttc	aacacagacc	caccagagc	cctcctgccc	tccttccgcg	3060
260	ggggctttct	catggctgtc	cttcagggtc	ttcctgaaat	gcagtgggtg	ttacgctcca	3120
262	ccaagaaagc	aggaaacctg	tggatgaag	ccagacctcc	ccggcggggc	tcagggaaca	3180
264	gaatgatcag	acctttgaat	gattctaatt	tttaagcaaa	atattatttt	atgaaagggt	3240
266	tacattgtca	aagtgatgaa	tatggaatat	ccaatcctgt	gctgctatcc	tgccaaaatc	3300
268	attttaatgg	agtcagtttg	cagtatgtct	cacgtggtaa	gacccctcaa	gctgctttag	3360
270	aagtaacaat	gaagaacgtg	gacgctttta	atataaagcc	tgttttgtct	tctgttggtg	3420
272	ttcaaacggg	attcacagag	tatttgaaaa	atgtatatat	attaagaggt	cacgggggct	3480
274	aattgctggc	tggctgcctt	ttgctgtggg	gttttgttac	ctggttttta	taacagtaaa	3540
276	tgtgcccagc	ctcttgccc	cagaactgta	cagtattgtg	gctgcacttg	ctctaagagt	3600
278	agttgatgtt	gcattttcct	tattgttaaa	aacatgttag	aagcaatgaa	tgtatataaa	3660
280	agcctcaact	agtcattttt	ttctcctcct	cttttttttc	attatatcta	attattttgc	3720
282	agttgggcaa	cagagaacca	tccctatttt	gtattgaaga	gggattcaca	tctgcatcct	3780
284	aactgctcct	tatgaatgaa	aaaacagctc	tctgtatgta	ctcctcttta	cactggccag	3840
286	ggtcagagtt	aaatagagta	tatgcacttt	ccaaattggg	gacaagggct	ctaaaaaaag	3900
288	cccaaaaagg	agaagaacat	ctgagaacct	cctcgccct	ccagtcctct	cgctgcacaa	3960
290	atactccgca	agagaggcca	gaatgacagc	tgacagggtc	tatggccatc	gggtcgtctc	4020
292	cgaagatttg	gcaggggcag	aaaactctgg	caggcttaag	atttgggaata	aagtcacaga	4080
294	atcaaggaag	cacctcaatt	tagttcaaac	aagacgcaa	cattctctcc	acagctcact	4140
296	tacctctctg	tgttcagatg	tggccttcca	tttatatgtg	atctttgttt	tattagtaaa	4200
298	tgcttatcat	ctaaagatgt	agctctggcc	cagtgggaaa	aattaggaag	tgattataaa	4260
300	tcgagaggag	ttataataat	caagattaaa	tgtaaataat	caggggcaatc	ccaacacatg	4320
302	tctagctttc	acctccagga	tctattgagt	gaacagaatt	gcaaatagtc	tctattttgta	4380
304	attgaactta	tcctaaaaca	aatagtttat	aaatgtgaac	ttaaactcta	attaattcca	4440
306	actgtacttt	taaggcagtg	gctgttttta	gactttctta	tcacttatag	ttagtaatgt	4500
308	acacctactc	tatcagagaa	aaacaggaaa	ggctcgaaat	acaagccatt	ctaaggaaat	4560
310	tagggagtca	gttgaaattc	tattctgata	ttattctgtg	gtgtcttttg	cagcccagac	4620
312	aaatgtgggt	acacactttt	taagaaatac	aattctacat	tgtcaagctt	atgaaggttc	4680
314	caatcagatc	tttattgtta	ttcaatttgg	atctttcagg	gatttttttt	ttaaattatt	4740
316	atgggacaaa	ggacatttgt	tggaggggtg	ggagggagga	acaattttta	aatataaaac	4800
318	attcccaagt	ttggatcagg	gagttggaag	ttttcagaat	aaccagaact	aagggtatga	4860
320	aggacctgta	ttggggtcga	tgtgatgcct	ctgcgaagaa	ccttgtgtga	caaatgagaa	4920
322	acattttgaa	gtttgtggta	cgaccttag	attccagaga	catcagcatg	gctcaaagtg	4980
324	cagctccgtt	tggcagtgca	atgggtataaa	tttcaagctg	gatattgtcta	atgggtattt	5040
326	aaacaataaa	tgtgcagttt	taactaacag	gatatttaat	gacaaccttc	tggttggtag	5100
328	ggacatctgt	ttctaaatgt	ttattatgta	caatacagaa	aaaaatttta	taaaattaa	5160
330	caatgtgaaa	ctgaattgga	gagtgataat	acaagtcctt	tagtcttacc	cagtgaatca	5220
332	ttctgttcca	tgtctttgga	caaccatgac	cttggacaat	catgaaatat	gcctctcact	5280
334	ggatgcaaag	aaaatcagat	ggagcatgaa	tgggtactgta	ccggttcata	tggactgccc	5340
336	cagaaaaata	acttcaagca	aacatcctat	caacaacaag	gttgttctgc	ataccaagct	5400
338	gagcacagaa	gatgggaaca	ctgggtggagg	atgggaaaggc	tcgctcaatc	aagaaaattc	5460
340	tgagactatt	aataaataag	actgtagtgt	agatactgag	taaatccatg	cacctaaacc	5520
342	ttttggaaaa	tctgccgtgg	gccctccaga	tagctcattt	cattaagttt	ttccctccaa	5580
344	ggtagaattt	gcaagagtga	cagtggattg	catttctttt	ggggaagctt	tcttttggtg	5640

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/536,664

DATE: 06/07/2005

TIME: 11:14:24

Input Set : D:\20050701-SEQ.txt

Output Set: N:\CRF4\06072005\J536664.raw

```

346 gttttgttta ttataccttc ttaagttttc aaccaaggtt tgcttttgtt ttgagttact 5700
348 ggggttattt ttgtttttaa taaaaataag tgtacaataa gtgtttttgt attgaaagct 5760
350 tttgttatca agattttcat acttttacct tccatggctc tttttaagat tgatactttt 5820
352 aagaggtggc tgatattctg caacactgta cacataaaaa atacggtaag gatactttac 5880
354 atggttaagg taaagtaagt ctccagttgg ccaccattag ctataatggc actttgtttg 5940
356 tgttgttgga aaaagtcaca ttgccattaa actttccttg tctgtctagt taatattgtg 6000
358 aagaaaaata aagtacagtg tgagatactg 6030
361 <210> SEQ ID NO: 8
362 <211> LENGTH: 2610
363 <212> TYPE: DNA
364 <213> ORGANISM: Homo sapiens
366 <400> SEQUENCE: 8
367 atcctgggac agggcacagg gccatctgtc accagggggt tagggaaggc cgagccagcc 60
369 tgggtcaaag aagtcaaagg ggctgcctgg aggaggcagc ctgtcagctg gtgcatcaga 120
371 ggctgtggcc aggccagctg ggctcgggga gcgccagcct gagaggagcg cgtgagcgtc 180
373 gcgggagcct cgggcaccat gagcgacgtg gctattgtga aggagggttg gctgcacaaa 240
375 cgaggggagt acatcaagac ctggcggcca cgtacttcc tctcaagaa tgatggcacc 300
377 ttcattggct acaaggagcg gccgcaggat gtggaccaac gtgaggctcc cctcaacaac 360
379 ttctctgtgg cgcagtgccg gctgatgaag acggagcggc cccggcccaa caccttcac 420
381 atccgctgcc tgcagtggac cactgtcatc gaacgcacct tccatgtgga gactcctgag 480
383 gagcgggagg agtggaacaac cgccatccag actgtggctg acggcctcaa gaagcaggag 540
385 gaggaggaga tggacttccg gtccgggtca cccagtgaca actcaggggc tgaagagatg 600
387 gaggtgtccc tggccaagcc caagcaccgc gtgaccatga acgagtttga gtacctgaag 660
389 ctgctgggca agggcacttt cggcaagggt atcctggtga aggagaaggc cacaggccgc 720
391 tactacgcca tgaagatcct caagaaggaa gtcacgtggt ccaaggacga ggtggcccc 780
393 acactcaccg agaaccgcgt cctgcagaac tccaggcacc ccttcctcac agccctgaag 840
395 tactctttcc agaccacga ccgcctctgc tttgtcatgg agtacgcaa cgggggcgag 900
397 ctgttcttcc acctgtcccg ggaacgtgtg ttctccagg accgggccc cttctatggc 960
399 gctgagattg tgtcagccct ggactacctg cactcggaga agaacgtggt gtaccgggac 1020
401 ctcaagctgg agaacctcat gctggacaag gacgggcaca ttaagatcac agacttcggg 1080
403 ctgtgcaagg aggggatcaa ggacggtgcc accatgaaga ctttttgcg cacacctgag 1140
405 tacctggccc ccgaggtgct ggaggacaat gactacggcc gtgcagtgga ctggtggggg 1200
407 ctgggcgtgg tcatgtacga gatgatgtgc ggtcgctgc cttctacaa ccaggaccat 1260
409 gagaagcttt ttgagctcat cctcatggag gagatccgct tcccgcgcac gcttggtccc 1320
411 gaggccaagt cttgtcttcc agggctgtc aagaaggacc ccaagcagag gcttggcggg 1380
413 ggctccgagg acgccaagga gatcatgcag catcgcttct ttgccggtat cgtgtggcag 1440
415 cacgtgtacg agaagaagct cagcccaccc ttcaagcccc aggtcacgtc ggagactgac 1500
417 accaggtatt ttgatgagga gttcacggcc cagatgatca ccatcacacc acctgaccaa 1560
419 gatgacagca tggagtgtgt ggacagcgag cgcaggcccc acttccccca gttctctac 1620
421 tcggccagca gcacggcctg aggcggcggt ggactgcgtt ggacgâtagc ttggagggat 1680
423 ggagaggcgg cctcgtgcca tgatctgtat ttaattggtt ttatttctcg ggtgcatttg 1740
425 agagaagcca cgctgtcttc tcgagcccag atggaaaagac gtttttgtgc tgtgggcagc 1800
427 accctcccc gcagcggggt agggaagaaa actatcctgc gggttttaat ttatttcac 1860
429 cagtttgttc tccgggtgtg gcctcagccc tcagaacaat ccgattcacg tagggaaatg 1920
431 ttaaggactt ctacagctat gcgcaatgtg gcattggggg gccgggcagg tctgccccat 1980
433 gtgtcccttc actctgtcag ccagccgccc tgggctgtct gtcaccagct atctgtcatc 2040
435 tctctggggc cctgggcctc agttcaacct ggtggacca gatgcaacct cactatggta 2100
437 tgctggccag caccctctcc tgggggtggc aggcacacag cagcccccca gcaactaaggc 2160
439 cgtgtctctg aggacgtcat cggaggctgg gccctggga tgggaccagg gatgggggat 2220

```

RAW SEQUENCE LISTING ERROR SUMMARY  
PATENT APPLICATION: US/10/536,664

DATE: 06/07/2005  
TIME: 11:14:25

Input Set : D:\20050701-SEQ.txt  
Output Set: N:\CRF4\06072005\J536664.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:1; Xaa Pos. 1,2,3  
Seq#:2; Xaa Pos. 1,2,3  
Seq#:5; Xaa Pos. 1

Invalid <213> Response:

Use of "Artificial" only as "<213> Organism" response is incomplete, per 1.823(b) of New Sequence Rules. Valid response is Artificial Sequence.

Seq#:1,2,3,4,5,10,11,12,13,14,15,16,17,18,19



## VERIFICATION SUMMARY

PATENT APPLICATION: US/10/536,664

DATE: 06/07/2005

TIME: 11:14:25

Input Set : D:\20050701-SEQ.txt

Output Set: N:\CRF4\06072005\J536664.raw

L:9 M:270 C: Current Application Number differs, Replaced Current Application No  
L:9 M:271 C: Current Filing Date differs, Replaced Current Filing Date  
L:29 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:0  
L:57 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:0  
L:109 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:0